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Connecticut Department of Environmental Protection

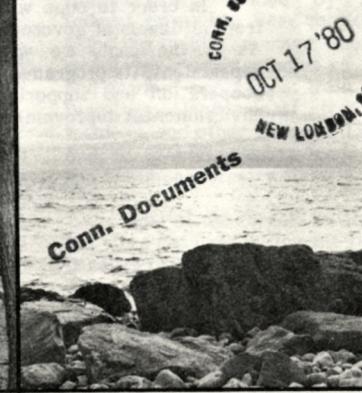
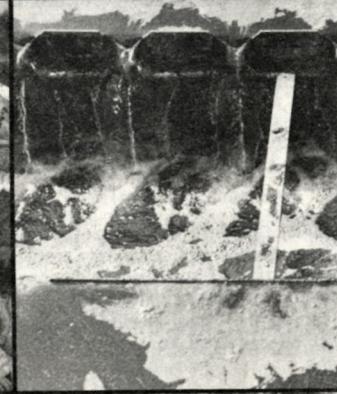
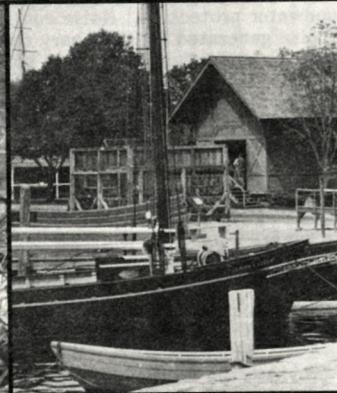
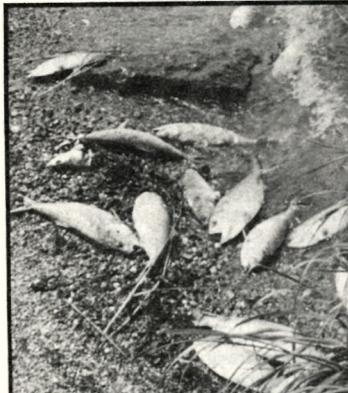


citizens' bulletin

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THE 1970s WERE A DECADE OF GREAT PROGRESS... IN THE MANAGEMENT OF VITAL

Dear Reader:

The Department of Environmental Protection is anxious to keep the public fully informed about its activities. It is with this object in mind that we present this look at the decade just completed and a few thoughts about the 1980s.

The 1970s were a decade of great progress in developing new programs and adopting new legislation. Significant strides were taken toward cleaning up our rivers and streams. An inland wetlands program was developed which contributes significantly to flood prevention and groundwater protection. Noise control regulations now provide basic standards for limiting noise generated by stationary sources throughout the State. Dangerous pesticides are now closely regulated as are those who apply them. The transportation of radioactive materials is closely monitored, and a statewide plan for the achievement of federal air quality standards has been brought up to date. A program to reestablish Atlantic salmon in the Connecticut River and its tributaries is showing signs of real promise. The State's deer management program, a wild turkey restoration program, and other game and non-game wildlife programs have been extremely successful. The State Forest Nursery has provided seedling stock for reforestation, and for conservation plantings on smaller areas, to thousands of Connecticut residents. Many valuable natural areas have been preserved through combined, federal, State, municipal, and private efforts. Major state projects must now be reviewed for their environmental impacts before they can be implemented.

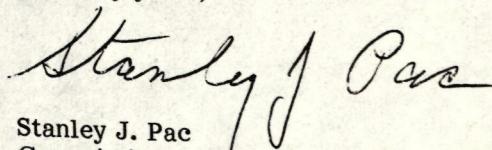
Passage of the federal Environmental Policy Act, the establishment of the Council on Environmental Quality, and Earth Day 1970 marked the start of this decade of progress. The widespread concern evidenced by the numbers of people involved in that first Earth Day celebration provided the climate in which positive legislation could be passed. As the years passed, many of those who were originally deeply concerned became more complacent or directed their concern elsewhere. Toward the end of the 1970s, pressing economic concerns replaced the environment in the minds of many citizens.

To protect the gains that have been made and to carry forward the important programs that have been started, a revived concern for our environment must be demonstrated. Earth Day 1980 must provide clear evidence that concerned citizens will not accept a simplistic approach to solving economic or social problems at the cost of our natural environment.

As we move into the 1980s, the detection of potentially dangerous existing waste disposal sites; the safe handling, treatment, recovery, reuse, and disposal of hazardous industrial wastes; the suitable location of solid waste disposal sites; and the development of sound, coordinated approaches to transportation planning and air pollution control are among the major problems facing us. In a period of extreme budgetary constraints, maximum citizen support will be required to assure continuation of our vital natural resource management programs.

In order to cope with the complex problems facing us, we will need cooperation from all levels of government and the active support of concerned and informed citizens. As in the past, we want to provide maximum access to information about the department, its programs, and the problems with which we are dealing. With the public's cooperation and support, we can look forward to another decade of progress and environmental improvements.

Sincerely yours,



Stanley J. Pac
Commissioner of Environmental Protection

The 1970s saw more management and realigned responsibilities

Division of Conservation & Preservation

Dennis DeCarli, Deputy Commissioner

Forestry

Robert L. Garrepy, State Forester

In 1971, after some years of protecting and conserving the natural resources of the State, the Connecticut Park and Forest Commission was absorbed by the newly-created Department of Environmental Protection. Any major organizational change involves a certain amount of trauma and today, nearly 10 years after the formation of DEP, many references still are made to the "good old days when forestry meant something." Or, to paraphrase a song by comedian George Burns:

"Old folks, like old oaks,
Stand tall and pretend;
But I wish I was 18 again."

However, an analysis of the State Forestry Unit in 1980, compared with 1970, shows that the programs have improved greatly over the past ten years. In 1970, forestry had a geographic orientation, with rangers responsible for virtually all operations within a specific area of the State. But with the demands of fire fighting, recreation area management, road maintenance, and a host of other duties, the forest ranger and his crew had little time for technical resource management. A small cadre of service foresters provided advice and assistance to private landowners, but in general technical forest management was a low-profile part of State government.

Under DEP, the Forestry Unit was relieved of responsibility for those non-professional duties that formerly took so much time, i.e.,

recreation management and maintenance. The forestry staff of 1980 is technically proficient, as dedicated to the job as were the old rangers, and has taken a lead role in the management of Connecticut's natural resources.

Forestry Unit responsibilities, generally defined under the provisions of Connecticut General Statutes Section 23, can be grouped into five major categories: operation of the Pachaug State Forest Nursery; forest fire prevention and control; operation of the James L. Goodwin Forest Conservation Center; forest management on State-owned lands; and the State Service Forestry program.

Located in Voluntown since 1956, the Pachaug Nursery grows and distributes more than two million tree and shrub seedlings annually. Planting stock is made available to Connecticut residents for a wide variety of conservation practices. The several hundred "Environmental Buffer Bunches" and the nearly 500,000 Christmas tree seedlings sold annually are outstanding examples of meeting public needs. The nursery, by statute, offers seedlings at cost and is one of a very few State operations that pays its own way.

Thanks to the generosity of one of the first professional foresters educated in the United States, the James L. Goodwin Forest Conservation Center in Hampton provides a variety of educational experiences to nearly 10,000 visitors each year. The center offers tours, lectures, demonstrations, field days, and resource management education to children and adults.

Foresters are usually associated first with forest fire fighting. In Connecticut, the Forestry Unit has statutory responsibility for the wildlands fire program and includes not only forestry staff but also specially-trained fire control personnel. Fire control staff work closely with DEP's four Regional Directors and maintenance personnel, providing fire suppression crews and equipment out of major DEP field facilities.

Since local fire departments are usually first on a fire scene and do most of the actual suppression work, however, DEP's major emphasis is on training, supplying hose and specialized equipment, and reimbursement of fire fighting costs incurred by local companies. A typical year will see some 1,200 forest fires burning about 2,500 acres. With more than two-thirds of the State in forest or farmland, and with a growing suburban population, the threat of wildland fires increases each year.

Under DEP, forest management is an accepted activity on all agency lands unless precluded by deed or by other major uses. This means that some 180,000 acres are available to the forest staff. While the highly-publicized fuelwood program is perhaps the best known activity, foresters are responsible for producing 12,000 to 15,000 cords of wood and 3,000,000 board feet of saw timber each year; planting some 40,000 seedlings; cooperating in creating wildlife management clearings, and a host of pruning, thinning, and timber stand improvement projects.

The Service Forestry program provides technical advice and assistance to private forest land owners, municipalities, and industry. Cooperatively funded by several federal programs, Service Foresters help the public manage their own woodlots; conduct studies on logging and sawmill operations; train private foresters, landowners, town tree wardens, and other interested parties; and, in general, assume leadership in the technical forestry field.

Most of the forests in Connecticut were cut over during the first two decades of this century. Today, after 60 odd years of protection, the State has nearly two million acres of woodland valuable for sawtimber, fuelwood, recreation, wildlife, watershed protection and aesthetics. As a

famous forester once said: "Forests form the basis for all other resource management considerations — in fact, after her people, woodlands are Connecticut's greatest natural resource!" The DEP Forestry Unit has a long and proud reputation to uphold. Despite restrictions imposed by budget and minimum staffing levels, the forestry and fire control staff continue to provide direction and assistance in all aspects of forest-based resource management.

Fisheries

Robert A. Jones, Chief

In 1866 the Governor of Connecticut appointed commissioners to investigate the subject of salmon and shad in the Connecticut River. Thus began the agency which is charged with the management of the fisheries resources of Connecticut. Today this responsibility rests with the Fisheries Unit of the Division of Conservation and Preservation of the DEP.

Fisheries management can be defined as a program to provide the most fish, of the desired sizes and species, for the most people for both commercial and recreational purposes. Complex in itself, such a program is doubly difficult in the midst of the east coast megalopolis in which we reside. With a professional staff of 20, including administrators, biologists, and hatchery managers, the Fisheries Unit is involved in seven basic areas: trout rearing and distribution; technical assistance to the public; environmental impact analyses; anadromous fisheries restoration; commercial fisheries catch and effort monitoring; public fishing access development; and management oriented research and investigations.

During the 1970s significant advances have been made in a number of these areas.

Trout rearing and distribution: Due to the numbers of fishermen and limited suitable publicly available waters, trout fishing in Connecticut is dependent upon the rearing and stocking of catchable trout. At the beginning of the decade a total of 108,000 pounds of catchable trout (244,000 fish) were reared in three State owned hatcheries. An additional 76,000 pounds were purchased from commercial hatcheries, and 12,000 pounds were provided by the U.S. Fish and Wildlife Service for a

total of 196,000 pounds (460,000 fish). During the 1970s our new Quinebaug Valley Hatchery (the most modern trout hatchery in the East) was constructed and went into production. The oldest continuously operating trout hatchery in New England, the Windsor Locks Hatchery, was phased out and subsequently sold, and the practice of purchasing commercially grown trout was discontinued. With modern techniques and the new Quinebaug Hatchery, we will produce some 350,000 pounds, or 800,000 trout, for distribution in 1980, more than double the production ten years ago.

Anadromous fisheries restoration: Begun in 1965, the agency's efforts, in cooperation with the other Connecticut River Basin states, to restore Atlantic salmon and American shad to the Connecticut River basin have probably produced the most significant advancement in fisheries management in New England since the Connecticut Fish Commissioners were appointed in 1866. Certain key accomplishments in the past decade are worthy of note:

- * Fishways on the mainstem Connecticut River dams, whose construction was started or completed during the 1970s, will return American shad to their historical spawning grounds for the first time since 1794.
- * A fishway at the Rainbow Dam on the Farmington River allowed shad to pass a barrier at that location for the first time in over 100 years.
- * Significant numbers of adult Atlantic salmon, released as juveniles in the Farmington, Salmon, and main stem Connecticut Rivers, have returned after two year sojourns in the North Atlantic.
- * For the first time since the disappearance of the Atlantic salmon from the river in the late 1700s, juveniles produced from Connecticut River Atlantic salmon were released in 1979.

Commercial fisheries catch and effort monitoring: Connecticut's commercial fisheries program has increased over fivefold since 1970. Starting with one biologist and three marine conservation officers in 1971,

the marine fisheries program now involves six biologists, eight conservation officers, and a support and seasonal staff averaging 15. With the increase in value of fishery products from the sea, there has been a burgeoning exploitation of our marine fishery resources. A major part of the marine fisheries program is the monitoring of the levels of effort and catch by commercial fishermen in our marine waters.

Although commercial fishermen have for many years been required to report their catch on an annual basis, it became clear in the mid-1970s that such reporting was virtually meaningless for management purposes. Along with a realignment of the commercial license structure in 1973, a program of monthly or seasonal reporting and automatic data processing was developed. This system, one of the most comprehensive and efficient on the East Coast, provides monthly and annual catch data on total catch, effort, catch by area, and landings by port for the major marine fisheries in the State.

Information obtained is beginning to show the real value of Connecticut's commercial fisheries for the first time in our history. As an example, the program has indicated that the major fisheries provided nearly \$5,000,000 dollars in revenue to our fishermen in 1978. Using standard economic analysis techniques this figure can be expanded to an economic worth to the State of nearly \$15,000,000.

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Law Enforcement

Frederick J. Pogmore, Chief

The Law Enforcement Unit within the Division of Conservation and Preservation was established in October 1971 when Public Act 872 created the DEP.

Under the previously existing Board of Fish and Game, the powers and duties of Conservation Officers had been limited to the enforcement of fish and game laws and regulations and related trespass laws. Specifically, this included enforcing laws and regulations that protect and control the harvest of game and non-game birds and animals and all fish taken by non-commercial methods as well as the laws and regulations governing the taking, possessing and selling of marine finfish, crustacea, and those species of fish taken commercially in the inland waters of this state.

ties and cooperating with the United States Coast Guard on reporting boating accidents and other statistics as required. Numerous other sections of the penal code covering crimes such as larceny, robbery, burglary, assault, criminal mischief, breach of the peace, and trespassing also became Conservation Officers' responsibilities for the first time.

These new responsibilities drastically changed the jobs of the Conservation Officers, making them the primary police force for the department. They also made it essential that we develop a new law enforcement training program for all persons in the Division of Conservation and Preservation who had law enforcement responsibilities. Initially a four-week course was developed in conjunction with the Connecticut State Police Department. The course has been gradually upgraded, and presently it consists of 400 hours of law enforcement training and is known as the Protective

The Law Enforcement Unit's enforcement activities can now be classified into four major areas which are: wildlife, recreation, boating, and commercial fishing. Its goals are to reduce the illegal harvest of the State's wildlife resources, to increase public safety on State waters, and to provide all visitors with an equal opportunity to use and enjoy our State-owned recreation facilities. The increase in law enforcement activity since the DEP was created can best be illustrated by the statistics in the box.

Operations & Maintenance

Richard Couch, Chief

Immediately after DEP's Conservation & Preservation Division was formed by the merger of several formerly separate natural resource management agencies, its newly integrated field work force and five regional directors came under a Director of Operations and Enforcement. Within six months after the creation of DEP, Operations and Enforcement became the Operations and Maintenance Unit with its basic mission being a coordinative one. Responsibilities were at first an amalgam of administrative, logistical, managerial, and liaison activities formerly performed in the older line agencies.

Ultimately Operations and Maintenance emerged as the unit with primary responsibility for programs, services, and activities that involved several central office staff disciplines and/or more than one field region. Its function was advisory to the Deputy Commissioner who put the programs and systems designed in the unit into action at the staff and field levels.

Since its formation in April of 1972, Operations & Maintenance has had continuing responsibility for coordinating the preparation of the Division's annual budget requests, for the development of financial plans based upon annual appropriations, for the Division's major maintenance and minor capital projects programs, and for the consolidation, review, and processing of the Division's annual request for 700 temporary employees who supplement staff during peak activity season.

The former Central Supply Depot of the State Park and Forest

Arrests Made & Warnings Issued:	7/1/72-6/30/73	7/1/78-6/30/79
Arrests Made by:		
Conservation Officers	858	2,280
DEP Special Police	0	1,465
Other police officers	97	58
TOTAL	955	3,803
Arrests by Type of Violation:		
Hunting	205	477
Fishing	602	867
Trapping	8	22
Boating	0	675
Park and Forest	0	1,534
Snowmobile	0	38
Miscellaneous	140	190
TOTAL	955	3,803
Warnings Issued:	967	2,044

Under the new agency Conservation Officers were given the added responsibilities of: enforcing the laws and regulations governing the maintenance of order, safety, and sanitation in all the state parks, forests, and other DEP properties; enforcing the laws and regulations which govern snowmobiles and all terrain vehicles; and enforcing the laws and regulations which govern all boats under sixty-five feet in length that use the waters within the boundaries of our State as well as coordinating boating enforcement efforts of local communities and lake author-

Services Training Course. All of our Conservation Officers must attend this course and graduate from it.

Each year approximately 160 part-time persons are hired as patrolmen, assigned to patrol the parks, forests, and other department-controlled recreation areas. In 1974 legislation was passed requiring that all part-time employees who are appointed as patrolmen complete a police training course. Such a course, consisting of 35 hours of training, was developed by the Chief of Law Enforcement and his staff and approved by the Commissioner of State Police.

Commission was transferred to the Operations and Maintenance Unit concurrent with its establishment in 1972. The basic function of the Depot has changed little; however, its scope of responsibility, the diversity of its stock, and the volume of work demanded of its personnel have expanded enormously to accommodate the additional needs of increased disciplines and a number of special purpose federal grant programs. The 1980s will see construction of a 90,000 square foot warehouse and consolidation of stock from five different buildings.

Shortly after DEP was formed, the Park & Forest Commission's lumber mill discontinued production. The mill was reactivated in 1974 because of skyrocketing costs and today produces approximately 500,000 board feet of lumber valued at one quarter of a million dollars annually, twice its 1972 production.

Consolidating former radio systems, a four-frequency, low-band, base-oriented system was developed to serve the integrated radio communication requirements of the Division of Conservation and Preservation shortly after radio communications became the responsibility of Operations and Maintenance in mid-1972. The system also accommodates several mobile units in the Division of Environmental Quality.

In July of 1978, 24-hour-a-day, seven days-per-week radio coverage was established from a base station in the State Office Building. By the end of February 1979 a computer terminal was installed to add access to an array of motor vehicle and law enforcement information systems.

In-house automated data processing responsibilities for the Division of Conservation and Preservation were assigned to the Operations and Maintenance Unit in 1973. By mid-1974, a fully computerized stock control program had been installed at the Central Supply Depot. A personnel management system has yet to become fully operational.

Public Act 73-660 created the Connecticut Indian Affairs Council (CIAC) and transferred responsibility for the care and management of the State's Indian reservations from the Commissioner of Welfare to the Commissioner of Environmental Pro-

tection with the CIAC as a semi-autonomous advisory body.

It was not until 1976 that the position of Indian Affairs Coordinator officially became part of the State's personnel classification system and was filled. Subsequent to the employment of a full time professional Indian Affairs Coordinator, the goal of self-determination and independence from government overseership for the reservation Indians began to materialize. Despite land claims, legal battles, and minimal financial resources, each of the State's four reservation tribes has made some gains, and two HUD grants have enabled the Council and the DEP to better assess the status of Indians in Connecticut and to determine their most pressing needs.

In 1974, the Operations and Maintenance Unit began its involvement with the federally supported Youth Conservation Corps (YCC) in Connecticut. This program, funded 80 percent by the federal government and 20 percent by the State, is a project-oriented summer program that employs 15-18-year-olds in conservation work on publicly owned lands and teaches enrollees basic ecological concepts and the principles governing resource management, and hopefully points them in a possible direction for the future.

YCC started in 1974 with 84 enrollees and \$72,000 in federal grant funds (matched by \$72,000 in State funds) and reached 209 enrollees in 1979 with \$374,000 in Federal funds and \$90,000 in State match. During these six years, \$1,392,000 in federal funds have been brought into the State, 915 young people employed, and \$1,438,000 worth of work accomplished on Connecticut's lands.

Patterned somewhat after the YCC program, the Young Adult Conservation Corps (YACC) was assigned to the Operations and Maintenance Unit in the summer of 1978. Although YACC, under Title VIII of CETA, is a project-oriented conservation work program, it is designed specifically as a one-year employment program for out-of-school and out-of-work young adults aged 16 to 23.

During 1978 and 1979, YACC employed over 500 young adults, brought \$1,737,988 in federal grant funds into Connecticut, and did \$1,967,000 worth of work on State lands.

Parks & Recreation

William Miller, Chief

The Office of Parks and Recreation operates within the DEP primarily to administer State lands set aside for outdoor recreation (Connecticut General Statutes 23-2). Nearly ten million people annually take advantage of the various recreational opportunities offered by the State.

The concept of outdoor recreation at the State level in Connecticut came about through the concerted action of visionary conservationists as early as 1909. In that year the General Assembly first acted upon a bill to reserve certain lands for the use of the public. Early policies stressed minimal development consistent with the enjoyment of simple outdoor activities. Advocates reasoned further that areas of unique natural beauty would soon give way to development and the values, both physical and spiritual, derived from visits to open wildlands would be diminished or lost entirely. Only long-term State control could assure their preservation.

The expansion of industry and commerce in Connecticut, accompanied by rapid homesite development, has substantially diminished open space availability in the State today. Departmental goals and objectives, particularly those associated with the need to provide fresh water related recreation sites and access to salt water, have been adjusted to the fact of urban expansion.

Of special concern to the Office of Parks and Recreation more recently has been its inability to provide natural-resource-based outdoor recreation facilities with easy access from urban communities. Selection criteria which governed early State land acquisitions focused upon remoteness from population centers and the natural attractiveness of rugged terrain, waterfalls, and similar scenic beauties. The pattern of public ownership, therefore, now requires a transport system to make State lands accessible to urban dwellers. In cooperation with both State and federal agencies, the Office of Parks and Recreation provides a busing program from population centers. Nearly 4,500 individual bus permits were issued under this Title XX Program in 1979.

The range of outdoor recreation activities currently available on State lands extends through the calendar year and includes swimming, picnicking, camping, museums and historic sites, interpretive nature study, hiking trails, boat launching sites, and hunting and fishing areas. Responding to increased needs for trails for powered vehicles, the Parks and Recreation office has established over two hundred miles of recreational trails for motorized conveyances such as snowmobiles and motorcycles.

Improved overnight camping for families and groups and more off-season camping have been provided by increasing camp lot sizes, paving access roads, and adding hot showers and flush toilets. Limited facilities for camping, coupled with sharply increased demand, have led to a policy of short-term use in order to serve as many campers as possible. Since 1970, a campsite reservation system has successfully enabled campers to plan vacations in advance with assurance of site availability and to avoid long-waiting lines.

The initiation of regularly scheduled interpretive nature programs at the shore parks has been followed by the addition of similar presentations at inland parks.

The problem of inadequate operating funds, meantime, has prevented the office from meeting needs such as picnic table and fireplace replacement, vandalism prevention, trail erosion control, and has limited surveillance and support personnel.

The cost-per-visit to the users of State recreation facilities remains attractive in the face of generally higher costs. Senior citizens, the handicapped, and even the occasional visitor may use facilities at no charge during off-peak periods. Fees charged for use of State-operated facilities represent a "good value" and reflect concern for the recreation needs of those who can least afford experiences in the out-of-doors.

The responsibility to preserve and make available for public visitation those key historic sites significant to both State and nation has also been assumed by the DEP. Protective custody is extended to such features as prehistoric dinosaur tracks, the habitations of Indians,

Revolutionary battle sites, and memorabilia of contemporary human history.

The responsibilities of the Parks and Recreation office include not only facilities management but also site selection and development, program implementation, and the planning, design and review of some projects initiated within the organization. Recreation services, extended in a staff-advisory capacity to the Deputy Commissioner, cover nearly 150 state parks, monuments, forests, and resource management areas. The office is called upon to study and review the recreation potential and suitability of existing holdings as well as those proposed for acquisition. Included here is acreage which is converted to alternate usage such as utility rights-of-way, surplus highway property, and projects of federal and local government.

Staff planners with the Parks and Recreation office also provide the liaison necessary to coordinate and adapt the work of architects and engineers to meet the specialized requirements of public outdoor recreation facilities. Many development and construction projects, however, remain well within departmental capabilities and are completed with their help by regular and seasonal field forces.

Property Management

Joseph Voboril, Director

As a result of DEP's organization in October 1971, activities of five agencies' land acquisition sections — those of the Park and Forest Commission and the State Board of Fisheries and Game and the Agriculture and Natural Resources Department's Soil Conservation Division, Open Space Section, and Central Land Acquisition Unit — were consolidated into one unit.

The functions of the new Land Acquisition Unit fell into three broad categories: 1) acquisition of land or land rights for the Department of Environmental Protection by purchase, easement, lease, devise, or gift; 2) property management and control of land or land rights under administrative responsibility of the Department and the leasing of rights required to achieve Department objectives; and 3) acquisition assistance provided to municipalities

and others applying for grants or other aid related to land or land related activities.

A comprehensive State land acquisition program, categorized into land types with ultimate acquisition goals for each land type defined, was prepared. Consolidation and integration of the land maps and records of the five predecessor offices was begun, and surveys of several old properties were completed.

The processing of municipal recreational development projects was started in 1973. These projects were initiated as a result of a 1973 legislative act which for the first time allowed the Department of Environmental Protection to transmit federal grant funds to municipalities for recreational development cost sharing projects.

A notable gift of property in Litchfield, the Topsmead State Forest, was received from the Edith Norton Chase Estate in 1972-73, and the Windsor Locks Fish Hatchery, obsolete for agency purposes, was sold.

During 1973-74 a notable bequest coming to the State was the Collis P. Huntington State Park located in Bethel, Redding, and Newington.

In October 1975 the Commissioner of Environmental Protection directed that the Land Acquisition Unit be broken into two units. An Open Space Acquisition Unit was established in the Office of the Commissioner, and the Property Management Unit remained with the Division of Conservation and Preservation.

In 1976-77, the Property Management Unit completed the acquisition of about 550 acres of the Quinnipiac River Marsh, the largest single remaining block of tidal wetland not yet in State ownership, from the Penn Central Railroad at a cost estimated at \$350,000.

Land acquisitions in 1978-1979 brought total land under DEP's administrative control to approximately 196,600 acres. This acreage is distributed across the State in 405 designated areas in 154 towns. A total of 791 structures, including 97 dwellings, are also maintained.

Some examples of activities and problems involved in administering

these include, in the 1977-1979 period:

In 1977-78 the Mohegan Tribe of Indians instituted a claim for the return to them of lands in the northeast section of the Town of Montville. This section includes the 170 acre Fort Shantok State Park.

In 1978-79 the Unit finished negotiating a lump sum payment to the Town of New Marlborough, Massachusetts, in lieu of paying annual taxes on flood control land. This involved negotiation with the town, getting approval at Town Meeting, working with the Commonwealth of Massachusetts, writing a legislative bill to provide a Special Act to appropriate the \$20,000 lump sum payment by Special Act, and then abating the carry over tax bill.

Dredging leases for disposal sites for the material dredged from the Connecticut River by the Army Corps have been secured for the Water Resources Unit and filed. Approval for all documents from the Stanley Works, Inc., pertaining to the Rainbow Fishway Dam has finally resulted in their filing --three years after their signing.

Authorization was given to the Connecticut Department of Agriculture to use six areas of DEP lands across the State for Community Gardens. Nine easements and 43 wildlife management agreements for use of 1,170 acres of State owned lands were processed, and the use of 52 dwellings by departmental employees at field installations was continued. On State flood control properties, 12 acreage agreements covering 172 acres of land and two dwelling leases were continued. The Department of Transportation transferred one parcel of surplus land totalling 9.01 acres in the Town of Haddam to DEP.

Although public demand for recreational use of lands for purposes such as hunting and fishing increases each year, the lands and waters available for lease or acquisition continues to decrease. With limited new lands and waters being made available for public outdoor recreation and resource management purposes, increased use pressure impacts upon our existing agency properties. Requests from private parties, municipalities, public service companies, and others to use State property for

various reasons continue to increase, and we must carefully review these to assure that the requested uses are compatible with Agency objectives and in the best interest of the general public.

Wildlife

Paul Herig, Chief

As early as 1895, the Connecticut Fisheries Commission was expanded to include wildlife and was renamed the Connecticut Fish and Game Commission. In 1925, it became the Connecticut Board of Fisheries and Game which it remained until it was incorporated, in the State's reorganization efforts, into the DEP.

Long before it was fashionable to be called an environmentalist, the Game Division was endeavoring to educate the public about the value of wetlands and salt marshes and was purchasing inland wetlands, strategic tidal areas, salt marsh, and upland farm and forest habitat and managing them to ensure quality wildlife habitat.

During the past decade, the basic statutory mandate under which the Wildlife Unit operates has not changed significantly, but our functions have increased as we have attempted to pursue our mandate in an increasingly urban oriented environment and in the light of new environmental legislation and increasing public awareness.

The Wildlife Unit is charged with conserving and managing all forms of wildlife found in Connecticut. Its goal is to maintain stable, healthy populations of all species on all suitable habitat in numbers compatible with carrying capacity and existing land use practices. In addition, the Wildlife Unit is dedicated to promoting appreciation for and understanding of the value of Connecticut's wildlife as a renewable natural resource and a factor in the quality of life in Connecticut.

The Wildlife Unit's major efforts fall under several general programs:

Special Management: The Wildlife Unit strives, through application of scientific wildlife management

principles and practices, to maintain stable, healthy wildlife populations. Biologists are responsible for keeping abreast of the biology and management of assigned species and providing the expertise for their management in Connecticut. The Unit is engaged in research consisting mainly of compiling indexes on species such as quail, beaver, osprey, squirrel, grouse, and waterfowl broods and assisting in federal woodcock, eagle, and mid-winter waterfowl surveys.

During the 1970s, osprey nesting platforms were erected, and this bird seems to be making a comeback. Restoration of the native American wild turkey to its former historic range in Connecticut has been accomplished and is being expanded. A major accomplishment has been the deer research and management system. This computerized comprehensive biological data collection system will be used in continuing research, management, habitat preservation, and resource utilization.

Habitat Management and Development: Quality habitat, providing adequate food, water, and cover, is essential to the well-being of wildlife. State forests, parks, and wildlife management areas provide many acres of wildlife habitat. The Wildlife Unit, working with other DEP units, strives to provide optimum habitat conditions through the inclusion, wherever possible, of wildlife habitat improvement techniques in forestry operations, park developments, and agricultural activities on these lands.

During the 1970s, more than 422,000 trees and shrubs were planted, 10,000 feet of level open water blind ditches for waterfowl were constructed, 517 acres of forest openings were maintained, 495 new acres of openings were created, and 472 acres of wildlife food patches were established. An average of 800-1,000 wood duck nesting boxes were maintained, and 473 new boxes were erected. Most all of this type work was done early in the decade. This past year no field management or development work was accomplished due to fiscal restraints and manpower shortages.

Recreation Management: The popularity of wildlife-based recreation and the increasing dependence of recreationists on State-owned land

has led the Wildlife Unit to explore and establish new ways of meeting demands without straining native wildlife populations or their habitat. In addition to State Forests and Wildlife Management Areas open to public hunting, the Wildlife Unit administers permit-required and State-leased hunting area programs to provide additional hunting acreage on privately owned land. Field trial and dog training areas and archery and firearms target shooting ranges provide opportunities for these special activities. Liberation of pheasants and other game birds buffers the impact of hunting on native game populations and increases hunting opportunities.

During the decade, the Unit has been responsible for releasing over 380,000 pheasants, 12,000 quail, 8,000 mallards, and 2,000 chukar partridge. Recent improvements in our methods of game bird stocking will ensure better utilization and more favorable cost benefit ratios.

Technical Assistance and Guidance: Marauding, orphaned, or injured wildlife often create problems. The Wildlife Unit provides information for dealing with these situations. Wildlife damage control methods, volunteer assistants authorized to do damage control work or care for orphaned or injured wild animals, and, in special cases, assistance from DEP personnel are available. Much of the Unit's public service role is necessarily handled by volunteer permit authorization systems. During the last decade volunteer assistants, for example, trapped and/or relocated close to 28,000 raccoons in response to nuisance complaints.

Wildlife Unit biologists also filled more than 500 requests for wildlife technical assistance which often consisted of custom wildlife management plans for landowners and corporations. Most of the unit's service recently has been confined to advice and instruction by telephone or by mail. Sample telephone logs indicate that more than 70,000 calls were received during the last decade, and more than 1,000,000 pieces of printed material were distributed.

In the early 1970s the Wildlife Unit had a working budget of \$114,000, with a separate propagation appropriation of \$94,000 and a work force of ten full-time personnel. In

fiscal 1980, the Unit budget is \$49,700 plus \$150,000 for purchase of wildlife. Full-time personnel level is ten with three professional positions vacant.

In the early 1970s, the estimated revenue generated by programs or licenses and permits for wildlife was approximately \$300,000 a year, with the annual licensed hunters 84,608. In 1979, the estimated revenue generated by the Wildlife Unit's programs and licenses was in excess of \$500,000, with license sales of over 105,000. None of these figures consider the economic stimulus resulting from public use of the State's wildlife resources, possible only because they have been managed, preserved, and/or conservatively used. In the last five years, since the white tailed deer program was implemented, these permit sales alone have generated \$579,595 in revenue and, it's estimated, have stimulated related spending of approximately \$7,500,000. In short,

despite reduced State spending, our wildlife resources are generating increasing income along with associated spending in the multimillion dollar range.

During the 1970s, in spite of budget problems and limited personnel, the professional staff of the Wildlife Unit has become involved with new federal and state legislation and regulations including those that protect rare and endangered species and that regulate the white tailed deer as a game animal. The National Environmental Policy Act (NEPA) and the State of Connecticut's Environmental Policy Act (CEPA) require increased attention from this unit in reviewing environmental impact statements, assessment reports, etc. Federal waterfowl steel shot regulations and zoning requirements, for another example, have also added to day-to-day activities with nearly 1,200 waterfowl having been captured and banded as part of Connecticut's Atlantic Flyway commitment.

The '70s: decade of significantly cleaning up our air, our waters

Division of Environmental Quality

Air Compliance

Leonard Bruckman, Director

In 1970 Congress passed sweeping changes to the clean air legislation of the 1960s, putting teeth in the law for the first time. The 1970 Amendments established the U.S. Environmental Protection Agency (EPA) and directed it to adopt National Ambient Air Quality Standards (NAAQS) for five major pollutants — particulates, sulfur

oxides, nitrogen oxides, carbon monoxide, and ozone. (A standard for hydrocarbons was established to be used as a guideline in attaining the ozone or "smog" NAAQS; hydrocarbons are one of the precursors of smog.)

The law required that the primary, public health-related standards be met by 1975, and the secondary standards protecting property and vegetation be met as "expeditiously as possible." The states were assigned the job of pre-

paring and legally adopting State Implementation Plans for Air Quality (SIPs) to demonstrate how the standards would be met by the deadlines. Congress further directed that states focus their efforts on stationary sources of air pollution and expressly reserved to the federal government the authority to control motor vehicle emissions at the tailpipe. Connecticut prepared its first SIP in 1972.

On August 7, 1977, Congress passed the Clean Air Act Amendments of 1977, the first major overhaul of the federal law since 1970. The 1977 amendments contain many new requirements that the states must meet and several serious sanctions if they fail to meet them. Perhaps the foremost challenge faced involved the problem of what to do about the country's failure to meet the deadlines set in 1970. As finally passed, the 1977 Amendments change the deadline for attainment of primary standards to December 31, 1982; the attainment date for the secondary standards remains "as expeditiously as practicable." Primary standard attainment extensions to December 31, 1987, are provided for areas, like Connecticut, with severe ozone (smog) or carbon monoxide problems under certain conditions. Congress included serious economic sanctions to be applied to states which fail to develop an approved SIP revision or which fail to meet the new deadlines for meeting standards.

The Air Compliance Unit of the DEP was established in 1972 and is responsible for administering Connecticut's SIP for achieving and maintaining federal and State air quality standards. The Unit's responsibilities are being met through a system of registration and permits for pollution sources; the review of transportation plans for conformance with air quality objectives contained in the SIP; the monitoring of air pollution levels; the inspection of possible pollution sources; and a program to involve the public in the development and implementation of air pollution control strategies.

Connecticut maintains an extensive air pollution monitoring network which helps the DEP document levels of the various pollutants and identify the degree of control measures needed to meet air quality standards. Sporadic measurement of

particulates was begun in 1957. Since then DEP expanded its network to add sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide to pollutants monitored and has begun chemical analyses of particulates to determine the lead fraction. Monitoring for all pollutants has increased in frequency and sophistication.

In the early 1970s Connecticut's levels of several of the criteria pollutants were well above the NAAQS standards to protect public health. The levels of particulate matter across the State were about 33 percent above the health standard; sulfur oxides were 20 percent above the standard; levels of ozone (i.e., smog) were over two times the federal standard. Carbon monoxide levels two to three times the standard were also recorded in most of the State's urban centers.

Today, levels of sulfur oxides are well below the standards statewide; the levels of particulate matter have been substantially reduced so that only the city of Waterbury exhibits concentrations in excess of the health standard. However, the smog problem in Connecticut has not improved; if anything, it has worsened due to increasing transportation activity and the continued impact of the transport of air pollution generated by states to Connecticut's southwest. During the summer months, unhealthy smog levels are reached on an average of once every three to four days. The other transportation-related air pollutant, carbon monoxide, has also failed to show any demonstrable improvement.

Connecticut has compiled a comprehensive computerized emission inventory which contains two separate components — a point source file of 12,000 relatively large stationary sources of air pollution and an area source file of small sources, such as home furnaces and transportation activities, which are too small to treat individually. The entire State is divided into grids 5,000 feet square, and area source emissions are computed for each grid for particulates, sulfur oxides, nitrogen oxides, carbon monoxide, and hydrocarbons.

The inventory enables DEP to project emissions and the resulting air quality for future years, so that appropriate control strategies can be developed.

Initially, the Unit focused on controlling air pollution generated by the State's business and industry. The Administrative Regulations for the Abatement of Air Pollution, the major legal tool by which the State's Air Pollution Control Program is implemented, set limits on the amount of pollutants to be emitted from any source. For those sources which violate the emission limitations, the regulations authorize the Department to issue orders requiring them to achieve compliance by a reasonable time. To date, the Air Unit has issued over 450 orders and over 7,000 notices of violation.

Strict enforcement of the State's air pollution control regulations, along with emission control devices on automobiles, has helped reduce the annual emissions of hydrocarbons from about 250,000 tons per year in the early 1970s to about 165,000 tons today. Annual emissions of particulate matter have been reduced from over 50,000 tons in the early 1970s to slightly over 40,000 tons today. Much of this success is attributable to the phasing out of municipal incinerators in favor of resource recovery and the use of sanitary landfills.

In 1976, Connecticut developed and began to implement a new Enforcement program — an administrative civil penalty system which is being used as a model for developing a similar program on the Federal level.

The cornerstone of Connecticut's efforts to control air pollution from the State's business and industry was our limitation on the allowable levels of sulfur in fuels burned here. The State attained the standards for sulfur oxides by limiting the permissible amount of sulfur in fuels burned in Connecticut to 0.5 percent. Since the early 1970s, Connecticut has required that only low sulfur fuels be used to run factories and power plants and to heat homes.

In the early 1970s before the phasing out of high sulfur fuels, sulfur oxide emissions in Connecticut totaled well over 300,000 tons per year. Now annual emissions have been reduced by over 75 percent; this reduction is attributable solely to the State's low sulfur fuel requirement.

In order to insure that expansion of existing industries or the

locating of new industry in Connecticut do not interfere with the attainment and maintenance of the NAAQS, the Air Compliance Unit conducts a comprehensive pollution source permit program. Any major new source of industrial pollutants is required to obtain both construction and operating permits from the Unit. Since 1971, approximately 2,000 construction and operation permits have been reviewed and issued.

Air pollution from motor vehicle use continues to be the leading reason for the failure of Connecticut, like most other states, to meet the federal standards. Part of the problem can be attributed to the delay in the implementation of the federal tailpipe emissions standards as a result of the numerous extensions given to Detroit. Annual emissions of nitrogen oxides (approximately 175,000 tons per year) and especially carbon monoxide (about 1,000,000 tons per year) have changed little over the last ten years.

A major new program, Automobile Inspection and Maintenance (AIM), has been developed to help reduce automobile-related air pollution; AIM is scheduled to be implemented in 1982. Automobile Inspection/Maintenance is designed to reduce exhaust emissions (primarily hydrocarbons and carbon monoxide) from motor vehicles by testing to identify vehicles with excessive emissions. Vehicles found to have excessive emissions must be repaired to reduce emission levels, usually by making minor engine adjustments to "tune" the vehicle to manufacturers' specifications. The continued implementation of the Federal Motor Vehicle Emission Control Program along with AIM should bring a significant reduction (approximately 50 percent) in yearly carbon monoxide emissions by the mid-1980s; yearly hydrocarbon emissions should also be reduced by another approximately 50,000 tons.

In August of 1973 Connecticut was directed by EPA to revise its SIP to include a Transportation Control Plan which would reduce overall emissions from motor vehicles by decreasing the use of single passenger automobiles and increasing the use of carpools and public transportation. The 1979 SIP Revision contains a process by which the Unit will review transportation plans each year. Through a legally enforceable memo-

randum of understanding with DEP, the Connecticut Department of Transportation (DOT) and the Urban Regional Transportation Policy Boards or Transportation Endorsement Boards will cooperatively plan and implement strategies to reduce emissions by encouraging ridesharing and improvements in the transportation sector.

Hazardous Materials Management

Stephen Hitchcock, Director

The Hazardous Materials Management Unit was established in 1979 in response to an increasing public awareness of the dangers of hazardous materials. The three individual sub-units, however, have a longer history as follows:

Pesticide Control: The Connecticut Pesticide Control Act and the Federal Insecticide, Fungicide and Rodenticide Act in the early 1970s required re-licensing of all commercial applicators of pesticides. Major efforts were made in the 1970s to increase the skills of commercial pesticide applicators. Numerous training classes and upgrading exams have measurably increased their knowledge and given greater protection to the public.

For the first time, farmers who use the more toxic materials had to be licensed as well as pesticide dealers. Enforcement efforts were stepped up with a consequent increase in requests for help from the citizens of the State. Aerial application of broad spectrum pesticides, except for agricultural use, was prohibited, and a closer watch was kept over aerial users. Numbers of permits for aquatic or specialized applications measurably increased as did information seeking by the public.

Hazardous Wastes: The Hazardous Waste section came into existence in the late 1970s as it became obvious that residues from industrial operations could not be disposed of safely with traditional methods. Numerous cases of serious contamination in all parts of the country, including Connecticut, drew widespread attention to this problem, resulting in the Federal Resource Conservation and Recovery Act which will define hazardous wastes and strictly regulate their transport and disposal.

Connecticut has taken its first steps to become authorized by the U.S. Environmental Protection Agency to run a program that will carry hazardous wastes from "the cradle to the grave." Although the effort to control hazardous wastes in this State is just getting under way, we are ahead of most states in having surveyed the industries to learn what wastes are being produced and something of present disposal practices and in having made a major effort to determine the location of old dumping sites. We provide technical advice on the disposal of hazardous wastes to industry as well as private citizens, a service that is increasing in volume and complexity. We are also developing a manifest system and preparing regulations to meet the requirements of the federal act and to protect the public.

Hazardous Spills Emergency Response Section: This section was conceived in 1969 as a subdivision of the Water Compliance Unit. During the first year of operation, with a one man staff, 105 complaints were recorded.

In 1972 a second staff member was added and three more were added in early 1973 to bring the active personnel to five. The number of spill incidents has steadily increased to a high of 743 reported incidents in 1979. While the gallonage of these spills may vary from year to year, the amounts spilled and recovered annually measure in the hundreds of thousands of gallons. In addition to spill response, the unit also licenses approximately 150 liquid waste haulers and 80 to 85 terminals for the loading and off-loading of petroleum and chemical products and conducts inspections of the terminals licensed.

Noise Control

Joseph Pulaski, Director

In 1974 the Connecticut General Assembly enacted legislation which directed the Department of Environmental Protection to establish and administer regulations for the control of stationary noise sources. (Mobile noise sources such as autos, trucks, and motorcycles were already regulated by the Department of Motor Vehicles.) As a result of this legislation the Noise Control Unit was established and, together with a citizens' advisory committee, de-

veloped a draft set of stationary source noise regulations. Public hearings on the proposed regulations were held in 1976 and 1977. Revisions were made based on input from the hearings, and the final regulations took effect on June 15, 1978. These regulations established maximum allowable noise levels to be measured at a receptor's property line.

In addition to enforcing these regulations, the Noise Control Unit encourages communities to establish local noise control ordinances. The Unit recently received a three-year grant from the U.S. Environmental Protection Agency to actively pursue the local noise control program. Funds for this grant were made available through the "Quiet Communities Act," passed by the U.S. Congress in 1978. Currently six municipalities are working with the Noise Control Unit under this program.

Radiation Control

Arthur Heubner, Director

Radiation control activities are performed with the aim of reducing radiation exposure of the public to the lowest practicable level. The Radiation Control Unit is responsible for control of all sources of ionizing and microwave radiation.

A statewide environmental radiological surveillance has been conducted to evaluate radiation levels to which the public might be exposed. For the last six years the unit has had a contract with the U.S. Nuclear Regulatory Commission to expand the surveillance program around the State's three operating nuclear power reactors. The funding from this contract has provided some additional sophisticated radiation counting equipment for the State Laboratory. Late in 1979, as part of the contract, 76 additional passive radiation monitoring devices were placed around one of the plants. They will provide for better measurement of low level radiation from natural background or from plants.

Periodic inspections are made of the approximately 2,500 installations which register use of diagnostic and therapeutic x-ray equipment. During 1978 and 1979 the unit participated in a nationwide program to evaluate the techniques used in mam-

mography x-ray machines. Each device was inspected and the output for each examination was reported to the owner. When the output fell outside of nationally accepted standards, technique changes were recommended.

As a result of legislation passed in the latter part of the decade, with the cooperation of the State Police the unit is making periodic inspections of vehicles transporting radioactive materials both at the point of origin and at check points along the highway.

Solid Waste Management

Charles Kurker, Director

The Solid Waste Management Unit was created in October of 1971, the year in which the DEP was formed. Previously a part of the Health Department, Solid Waste Management is responsible for overseeing all facets of solid waste management in Connecticut. This includes planning for long-term disposal needs at the local and statewide levels; reviewing engineering plans and specifications for landfills and volume reduction facilities; inspection of solid waste facilities and enforcement of the statutes and regulations; conducting operator training courses and community education programs; and the administration of an on-going grants-in-aid program.

In 1971, a major concern of the Solid Waste Management Unit was the air pollution caused by municipal incinerators. In conjunction with DEP's Air Compliance Unit, all of these facilities were evaluated, and all but four were subsequently shut down. Since the waste which had previously been burned would have to be disposed of in some other way, and since Connecticut's geology is not widely suitable for landfill siting, new long-term disposal options had to be developed.

The federal government has granted funds for operation to the Solid Waste Management Unit since 1966. In the early 1970s these funds were used to develop a State Solid Waste Management Plan which would provide for Connecticut's long-range needs in the area of waste disposal. An updated plan, prepared by the DEP and the General Electric Company in 1973, drew heavily upon new

resource recovery technology which could convert solid waste into fuel. Recyclable materials would also be recovered and sold. A modification of the plan envisions three major plants with several ancillary facilities to service outlying areas. This plan was one of the first of its kind in the United States and has since served as a model for waste management planning.

One of the most important functions of the Solid Waste Management Unit is enforcing the applicable federal and State statutes and regulations since improperly operated disposal facilities can produce pollutants which are harmful to the air and water. Inspections are made on a regular basis, and any operational problems or violations of the laws are noted in a report. Under the enforcement program, the number of open dump types of operations in Connecticut has decreased drastically.

There is currently a great deal of difficulty in closing down sites because the Commissioner is required to "provide reasonable alternative facilities" to such sites. Given the law that allows a local zoning board the right to regulate land usage, it is next to impossible to either locate a new site or order one municipality's waste into another. In order to help solve this problem, legislation has been proposed by the Solid Waste Management Unit which would clarify the Commissioner's powers as well as overhauling the permitting procedure.

The Solid Waste Management Unit's planners are responsible for continuous development of short-and long-term disposal solutions for Connecticut's municipalities. Working in conjunction with other Solid Waste staff and the Connecticut Resources Recovery Authority, the planners meet with municipal officials and facility owners and/or operators to try to determine the most efficient waste management options available. Work is in progress to further update the State plan, which must be revamped to reflect today's technological and economic conditions. Many of the same constraints which hamper enforcement efforts affect planning as well; there are several municipalities whose disposal facilities could easily accommodate waste from additional towns, but they choose not to share their sites. However, nine regional municipalities have contracted with the

CRRA for use of the resource recovery facility in Bridgeport. The establishment of several other regional solid waste facilities has been a major accomplishment of the Solid Waste Management Unit, but many more of these facilities are needed before Connecticut's waste problems can begin to be solved.

The technical services section assists municipalities in every facet of disposal operations. Staff geologists survey potential landfill sites to determine possible environmental impact. They oversee the re-engineering or expansion of existing landfills to ensure maximum land use with minimum resultant pollution. Permits are issued to those sites which meet all of the standards required by law. During the past decade, 44 existing facilities were permitted; 29 mixed municipal and 42 bulky waste sites were also established. Engineers review plans for incinerators, shredders, transfer stations, resource recovery facilities, and any other type of volume reduction plant. The number of permitted transfer stations has risen from three in 1971 to 30 today. Two resource recovery facilities are also being phased in: the CRRA Bridgeport plant is nearing the end of its shakedown period and will soon be producing a powdered fuel from solid waste; at the same time, several towns in the Windham area are planning to construct a small-scale plant which will provide steam for a local industry.

The Solid Waste Management Unit's Operator Training program is designed to teach the personnel actually running a disposal facility the most efficient methods of operation. Each operator must pass a test in order to be certified. Over 500 private and municipal employees and even some interested citizens have participated in these courses.

A water quality monitoring program has been established to determine how the disposal of solid waste affects ground and surface water. During the past ten years, approximately 142 sampling points at municipal, private, industrial, and residential sites across the State have been established to monitor leachate travel from solid waste disposal areas.

In an effort to reduce the volume of waste to be buried at disposal areas and, at the same time, conserve natural resources and fossil

fuels, the Solid Waste Management Unit has been encouraging municipalities to initiate source separation programs. At the present time, over 100 municipalities conduct source separation programs and recycle paper, glass, and/or metals. In a related effort, the DEP, in January 1978, initiated a paper source separation program in State offices.

The Solid Waste Management Unit provides financial assistance to municipalities through an on-going grants-in-aid program. More than 12 million dollars have been awarded to Connecticut municipalities for the planning, design, and construction of volume reduction plants, the development of regional solid waste plans, and the purchase of landfill equipment.

Water Compliance

Robert Moore, Director

At the beginning of this past decade, the State of Connecticut was years into one of the most aggressive water pollution control programs in the country. Efforts actually began in the 1920s although Connecticut's Clean Water Act, which gave the former Water Resources Commission broad pollution control powers, became effective on May 1, 1967. By 1970 the Water Resources Commission had issued approximately 825 pollution abatement orders and was already beginning to witness improvements in stream water quality.

The intent and purpose of the Clean Water Act is to protect and enhance the water resources of the state by the elimination of pollution. The Act requires the control of discharge to both ground and surface waters to protect the health and welfare of the citizens, wildlife, fish, and other aquatic life. Goals were formalized in 1970 when Water Quality Standards were adopted for all surface waters in the state. The goal of the achievement of a minimum of fishable and swimmable quality of surface waters was established, with clean waters to be preserved from any degradation.

In 1970, approximately 25 people in the Water Resources Unit and 10 people in the State Health Department were employed in the field of water pollution control. The formation of the DEP in 1971 placed

these people in the Water Compliance and Hazardous Substances Unit. In 1978, the Hazardous Waste Sections were formalized into distinct units to accommodate the more intense needs developing in that area. Over the ten years, both the State budget and Federal program grants have increased dramatically. The program budget has grown from \$376,000 to \$2,450,000 during this period and at present provides for 101 positions. The unit comprises a Planning and Water Quality Standards Section, a General Water Pollution Control Section, and a Municipal Construction Grants Section.

The unit's three sections were established to implement programs in accordance with State and federal statutory mandates. A comprehensive planning and water quality monitoring program identifies water quality management problems and helps develop goals, programs and priorities for long term enforcement and implementation. The enforcement program identifies specific pollution problems, issues Orders and Permits, and effects implementation. The Municipal Construction Grants program directs efforts to upgrade and expand municipal sewerage systems as required for pollution abatement by administering an annual \$50-\$70 million State and federal grant program.

The Municipal Construction Grant Program has been responsible for elimination of vast amounts of untreated or partially treated sewage discharges during the decade by providing grants for the construction of municipal sewage treatment plants and sewers throughout the state. The State grant program began in 1967 with a \$150,000,000 bond fund authorization. In 1968, this was increased to \$250,000,000, and it was further increased in 1972 to the present total of \$325,000,000. In the early stages of the program, state money was used to prefinance the unavailable federal share.

In spite of numerous changes in State/federal grant ratios, funding delays, and difficulties with the constant rule changing on the part of United States EPA, major successes have occurred and can be measured in terms of projects completed and level of sewage treatment attained throughout the state. Prior to 1970, 57 projects in 44 municipalities had been funded; by the end of the decade

this had increased to 280 projects in 123 municipalities. A total of \$265,000,000 of the State's total \$325,000,000 bond authorization and \$44,000,000 of federal funds have been obligated.

The State and federal sewerage construction grant award total does not include the local share which usually adds another 10 percent. In 1970, only 46 percent of municipal treatment plants provided secondary treatment, but by 1980 over 95 percent of all municipal treatment plants had achieved the level of secondary treatment or better. The table summarizes the major achievements of this grant program over these past 10 years.

grown from two people to 23. The responsibilities of this section are numerous but primarily include: updating Connecticut's Water Quality Standards every three years; maintaining ambient (trend) water quality and biological monitoring programs; developing water pollution abatement strategies with the use of computerized water quality models which simulate specific water bodies; co-ordinating lakes management activities in the State; overview and co-ordination with Connecticut's Areawide Waste Treatment Management Planning Board (208 Program); and coordinating development of a State/EPA agreement delineating the major environmental issues and the

tonic River sediments). This Primary Monitoring Network is a cooperative program with United States Geological Survey. Due to increased costs and reduced funding, the sediment analysis has since been eliminated and the number of water quality sampling stations and parameters analyzed has been steadily reduced.

The monitoring programs have indicated that during the 1970s a dramatic improvement in water quality in most rivers throughout the State occurred. This improvement, a direct result of the enforcement programs, is such that of the 8,400 stream miles in Connecticut only 299 miles presently do not meet water quality standards. A river-by-river breakdown of these stream miles is given in Connecticut's Water Quality report to the U.S. Congress (305(b) report).

The Water Compliance Unit's involvement with lakes was limited in the early 1970s to an algae and weed control program which provided some monies for short term or cosmetic improvements. A phosphate bill limiting the phosphorus content in detergents was passed in 1971 and later revised to provide for 100 percent construction funding for municipal treatment facilities removing phosphate from sewage and also to allow the Commissioner to ban the sale or use of phosphorus-containing detergents from specific areas. In 1977, Water Quality Standards were revised to establish a policy of severely limiting phosphorus discharges to lakes. In 1979, an Office of Lakes Management was formed with the responsibilities of: 1) classifying lakes that have public access according to trophic characteristics; 2) developing lake priority ranking criteria; 3) establishing a lake priority list for future restorative funding; 4) preparing a lake management handbook; and 5) performing selective diagnostic studies.

During the 1970s, most attention was directed at abating pollution caused by direct or "point sources" of discharge.

In 1976, Connecticut's Areawide Waste Management Program, called the 208 program (section 208 of PL 92-500), was formed. This program is directed at identifying the extent of non-point sources (NPS) of pollution and developing strategies for their control. As more and more point sources are cleaned up or eliminated,

Number of Sewage Treatment Plants: 1970 and 1980

Level of Treatment	Number of Municipal Wastewater Treatment Plants	
	1970	1980
Primary	38	4*
Secondary	32	67
Advanced	0	9
Total	70	80

*The four remaining primary treatment plants are soon to be upgraded or phased out of operation.

In June 1979, the municipal construction grant program was expanded when the Unit was delegated the responsibility of administering the federal construction grant program under Section 205(g) of the federal Clean Water Act. This delegation accounted for an increase in staff of 42 persons under a program grant of \$860,000.

The Planning and Water Quality Standards Section of the Water Compliance Unit had no comparable section in the former Water Resources Commission in 1970. However, the Water Resources Commission initiated the basic water quality planning and management essential to Connecticut's water pollution control program, Connecticut's "Water Quality Standards." These standards were initially prepared in 1967 and received federal approval in 1970. These standards clearly established water quality goals and policies and demonstrated the need to establish a distinct planning section to deal with complex water quality problems and overall program needs.

Since 1972, the Planning and Water Quality Standards Section has

activities of the State departments of Environmental Protection and Health Services and the federal Environmental Protection Agency necessary to deal with such issues.

Water quality standards are now being revised for the third time since 1970. Connecticut's water quality standards are notable because we are among only a few states whose standards have been federally approved after each revision. The Water Compliance Unit is presently revising these standards to include policies and goals for groundwater quality protection.

To monitor trends in water quality, several water monitoring programs have been developed and revised over the decade. The ambient water quality monitoring program began in 1967 and by 1970 consisted of monitoring 90 stations three times per summer. By the mid 1970s, the number of sampling stations was reduced to 43 but the frequency and number of parameters analyzed increased dramatically. A program for analyzing stream sediments was also begun (which led to the discovery of PCBs in the Housa-

the effects of NPS will be more evident, and the control strategies developed under 208 will be implemented throughout the 1980s.

The 208 program is emphasizing improved local awareness of the problems and promoting local action and ordinances to control or manage these types of pollution which in many cases are the result of poor land use practices.

To date, the Connecticut 208 Program has worked on regulatory programs to minimize the following types of non-point source pollution: erosion and sedimentation, urban stormwater runoff, agricultural stormwater runoff, landfill leachate, groundwater contamination, and septic and sewage sludge disposal. In addition, a major effort has been made to develop a management system for the proper treatment and disposal of hazardous industrial wastes.

The Enforcement and Permitting Section is the backbone of our general water pollution control program for it is in cooperation with this section that all projects and plans must be designed, constructed, implemented, and monitored. In 1970, 17 people made up the enforcement program of the Water Resources Commission. Today we are budgeted for 25 people.

The Clean Water Act of 1967 provided the primary tools to carry out effective enforcement. Only minor procedural changes have been added over the last ten years. The issuance of administrative orders to polluters is our primary tool. To date, 2,538 orders to municipalities, industries, private citizens, farmers, restaurants, camps, schools and others have been issued, 2,000 of which have been fully complied with. Approximately 10 percent of the orders issued have required action by the Attorney General, and numerous injunctions, court orders, and fines have been obtained. Orders may be issued against existing and ongoing sources of pollution, potential sources, and past sources. Permits are required for all new discharges.

In 1973, a new state enforcement tool was added by the Economic Enforcement Act which provided for the issuance of civil penalties by the Commissioner against those persons

or municipalities failing to meet the conditions of an order or permit.

The unit began requiring industrial dischargers to municipal sewerage systems to install necessary pretreatment systems in 1972. This program is identical to the surface water program, and over 300 pretreatment systems are installed or are under way. EPA is only now beginning to require states and communities to implement pretreatment programs, but Connecticut is essentially 70 percent completed.

All municipal and industrial dischargers are required to monitor their discharges at a frequency depending on the type and volume of the discharge. The staff inspects each treatment system and samples the discharge at least once per quarter. In addition to monitoring the municipal sewage treatment plants, the unit also provides technical assistance to the operators in terms of operator training and certification and laboratory training and assistance. Since 1974, we have certified 670 sewage treatment plant operators at various levels and 160 lab technicians.

Our massive clean-up of industrial wastewaters could not have been accomplished without the overwhelming support of Connecticut's industry which has spent hundreds of millions of dollars in the last ten years to install treatment facilities and modify plants and production processes.

A major increase in the unit's activities related to subsurface sewage disposal, septic disposal, sewage sludge disposal, landfill leachate control, and the investigation of hazardous waste disposal sites and contaminated groundwaters led to the formation of a Land Disposal Section in 1979. This section provides technical assistance to the permits and enforcement, municipal facilities, and construction grants sections wherever effluents will be, or have been, discharged on the land. It also provides services to the Solid Waste Unit, the Water Resources Unit, and the Hazardous Waste Management Section and cooperates with State and local health departments. At this time, no other state program approaches Connecticut's in accurate consideration of the impacts of land treatment.

Water Resources

Benjamin Warner, Director

Prior to 1971, management of Connecticut's water resources came under the jurisdiction of several former Department of Agriculture and Natural Resources Divisions and the Water Resources Commission. With the formation, in October 1971, of the Department of Environmental Protection, the segmented regulatory functions related to water resources management, with the exception of water quality, were assigned to the Water Resources Unit. This newly formed DEP Unit was also delegated the responsibility for beach and shore erosion and flood control programs. Besides the director and assistant director, the new unit's personnel consisted of 14 staff members from the abolished Department of Agriculture and Natural Resources. In 1975, the Water Resources Unit's staff had grown to 36 persons with emphasis on personnel trained in the natural sciences and able to address environmental concerns.

By 1977, the staff had dropped to eleven. That year, the Commissioner made a substantial commitment to revitalizing and restaffing the Unit. The successes and problems experienced by the Unit over its first five years of operation formed the basis for reorganization and restaffing. In order to improve efficiency and effectiveness, the Unit was organized into two major sections: Wetlands Management and Flood Management. Restaffing provided personnel that had the technical training to carry out the Water Resources Unit's statutory responsibilities and attempted to seek a balance among those trained in the natural sciences and those with administrative and engineering backgrounds. Among the decade's important achievements have been the stabilization of the Unit's staff and the achievement of a balanced point of view among environmental and other concerns.

At this writing, the Unit is staffed by 20 full-time professional and five clerical people and administers the State statutes regulating the use of tidal, coastal and navigable waters of the State of Connecticut; the use of the tidal and inland wetlands; beach and shore erosion projects; regulation of and construction and maintenance of dams; flood control programs which include PL 566

small watershed projects; Municipal Flood and Erosion Control Board programs; the stream channel encroachment lines; the flood insurance program; and floodplain management.

The Tidal Wetlands Preservation Program, established in 1969 under Agriculture and Natural Resources, continues under the auspices of the Wetlands Management Section. Virtually all of the State's tidal wetlands have now been mapped and are under regulation. Upon completion of designation hearings on Connecticut River tidal wetlands, approximately 17,000 acres of wetlands will be mapped and protected by the program.

Approximately 20-25 percent of Connecticut's area is composed of inland wetlands and watercourses, an interrelated web essential to an adequate supply of surface and underground water, as flood storage areas, and as habitat for a vast number of animal, aquatic, and plant life forms. To protect this indispensable and irreplaceable natural resource, the 1971-72 session of the General Assembly enacted the Inland Wetlands and Watercourses Act. The Act declared that it was the policy of the State to encourage the regulation and protection of inland wetlands and watercourses by the State's municipalities as long as they followed legislative guidelines. Those municipalities failing to regulate their own wetlands, as well as State projects, would be regulated by the Water Resources Unit. The unit initially had the responsibility to develop guidelines and model regulations with a minimum of staff and budget to carry out this charge. At first, there was reluctance on the part of municipalities to accept responsibility for the wetlands law. However, through persistent efforts by the Wetlands Management Section, only 18 towns now remain unregulated by their own agencies.

The reorganization and restaffing in 1977 for the first time allowed the Water Resources Unit to retain the technically trained personnel that could adequately carry out its statutory responsibilities. With its enlarged staff, the Wetlands Management Section is capable of meeting the varied needs of all Connecticut towns for technical assistance regarding wetlands matters. Staff expertise is now available in the fields of soil sciences, engineering, biology (wildlife and floral), water quality, geology, and hydrology. In

addition to its tidal and inland wetlands responsibilities, the Wetlands Management Section continues in its duties regarding the regulation of erection of structures and dredging in tidal, coastal, or navigable waters of the State. A new policy was implemented to insure that, whenever possible, no structure permit would be approved that would prevent access to land below mean high tide.

Although hampered by a lack of engineering staff after the initial organization, especially because of the loss of some seasoned professionals who took early retirements, the Water Resources Unit continued work in flood management initiated by the former responsible agencies. Channel encroachment lines were established on the Hockanum and Blackberry Rivers. Flood control dams were constructed in Norfolk, Wilton, West Hartford, Ridgefield, and Hamden under the Federal Small Watershed Protection Program, and a Special Act flood control program was completed in Bristol. As part of the Corps of Engineers flood protection program for Winsted, flood control improvements were made to Highland Lake by the Flood Management Section and the Department of Public Works. Phase I of the Rooster River Project in Bridgeport was

started along with planning for many other flood control programs, one of which was a comprehensive approach to the Farm River flooding problem in East Haven. Its first phase now under construction, the Farm River program is a first attempt to utilize both structural and non-structural solutions and coordinate local/State/federal programs.

Two serious dam failures in other states during the past decade stirred concern for dam safety throughout the nation. In Connecticut, the Water Resources Unit has been especially active in improving its systematic dam inspection and inventory program, with the assistance of the Corps of Engineers. Three staff members are now devoted to this vital program. Connecticut has about 1,100 dams of sufficient size to warrant careful regulation.

Between 20 and 30 years ago, much work was undertaken by the State and the Corps of Engineers to correct serious beach and shore erosion problems along Connecticut's coast. During the 1970s, many of these areas were again showing the ravages of the sea, prompting a significant increase of requests for assistance by the Water Resources Unit.

Behind the scenes and successes...

Staff Services

George Russell, Director

The seven sections which constitute the Staff Services Unit are diverse in character and in objectives. However, they share at least one thing: they have all made considerable, even laudable, progress over the last decade. Two of the sub-units, Adjudication and Litter Control, are quite new, and the fact that they have been created and are functioning is an achievement in itself.

The changes which have taken place in the Natural Resources Center, Information and Education, Open Space Acquisition, and Planning and Coastal Area Management, in the main, have been evolutionary and positive. Despite generally decreasing funding levels, dedicated staff members in every section, through ingenuity and persistence, have found ways to move closer to their in-

dividual objectives and thereby to provide better services.

Adjudications Unit

William S. McGee, Chief Hearings Officer

The Adjudications Unit was established in late October 1979, and is now composed of three hearing officers and a chief who also serves as the unit's director.

The Unit was an important part of Commissioner Pac's reorganization plan for the department in 1977 and is designed to eventually take over the entire adjudicative hearing function for the department. This should improve operating efficiency by removing the hearing function from line administrators and technicians and transferring it to full-time hearing officers, professionally trained in the conduct of administrative hearings.

The chief hearings officer is also responsible for the development, review, and amendment of departmental regulations. The new Unit has already begun holding hearings and issuing proposed decisions for various units.

Bureau of Administration

Norman Glover, Director

The Business Administration Unit serves as the coordinating body for the administration of the department's varied programs. Responsibilities falling within the unit's jurisdiction include the preparation of budgets; management of all department funds; accountability for federal aid programs; personnel activities including recruiting; purchase and inventory control; licensing and registration issuance including hunting and fishing licenses; central services and management and cost analysis of the department's operations.

The Financial Services Section is responsible for budget preparation and management. Through the 1970s the department's budget has doubled as have the responsibilities of the Financial Services Section. During Fiscal Year 1974, a federal aid subsection of Financial Services was formed to handle the rapid increase in Federal funds coming into the State. Federal contributions have grown from 1.4 million dollars for FY '73 to 6.2 million dollars for FY '80.

The Licensing and Revenues (L&R) Section accounts for the revenues received by the Department. On October 1, 1971, the L&R Section was formed, within the new DEP, combining several license and permit functions:

- 1) Boating Registration
- 2) Commercial Fishing Licenses
- 3) Deer Permits
- 4) Sportsmen's Licenses
- 5) X-Ray Machine Registration

On July 1, 1973, the boating registration function was transferred to Motor Vehicles.

Commercial licenses were computerized March 20, 1975, and the number of licenses issued has grown substantially. Along with this, the sale of sportsmen's licenses brings revenue to the state of over one million dollars annually.

The two most drastic changes this section has seen are:

- 1) In 1976 the first State Land Lottery for deer permits was held with approximately 5,000 hunters chosen. This number is expected to reach 17,000 in 1980.
- 2) Commercial license fishing flags were replaced in 1978 with permanent metal plates, resulting in great savings.

The DEP Personnel Unit has evolved to a far more complex operation than it was at the department's formation. In October 1971, the Department of Environmental Protection was created by consolidating units from Agriculture and Natural Resources and the Health Department with newly formed units such as Air Compliance. The Personnel Unit's major task was to establish a full set of job specifications for the new department as well as hiring new employees and establishing procedures and positions. At that time the number of full-time employees in the department was slightly over 500, only a handful of whom were federally funded. As we enter the 1980s, the number of full-time employees is 742, over 175 of whom are federally funded.

The advent of collective bargaining brought the first employee contracts on July 1, 1977. These changed the tone of management-

labor relations and brought complications to the Personnel Unit in the form of several different pay plans and varied contract provisions applying to the DEP staff.

Affirmative action has become a force in our hiring and recruiting activities as the department seeks to expand its employment of women and minority group members.

The Purchasing & Central Services Unit of the Bureau of Administration was organized as the Purchasing Unit in 1971. The Purchasing Unit has evolved into the current Purchasing & Central Services Unit, which has nine employees authorized to staff the Purchasing Section, Inventory Control Section, and Support Services Section. These sections process procurement actions; oversee stationary supplies, shipping and receiving; monitor agency vehicle and gasoline requests; submit vehicle use and accident reports; manage computerized real and personal property inventory levels.

Coastal Area Management

Arthur J. Rocque, Jr., Program Manager

The Connecticut Coastal Area Management (CAM) Program was established in early 1975, in response to the findings of the New England River Basins Commissions' Long Island Sound Study, citizen and legislative concern for the coastline, and the initiatives of the federal Coastal Zone Management (CZM) Act of 1972. Under the federal Act, funds were made available to all 30 coastal states and five coastal territories in the nation to guide development and ensure protection of coastal resources.

Connecticut chose the DEP as the planning agency to receive and administer federal funds under the CZM Act. Since its beginning, the CAM program has been guided by a 24-member Advisory Board, composed of representatives from State and coastal regional planning agencies and citizens representing various interests in the coast.

For four years, the CAM program studied the overall effects of coastal activities, identifying critical

coastal resources that have been affected and exploring a variety of methods for improving the management of coastline use and development.

Public input, as well as participation by local, State, and federal agencies and various interest groups, was actively sought during that time.

The 1978 General Assembly passed a general expression of the intent of the CAM proposal and the need for better management of coastal resources and established an Interim Study Committee, charged with exploring further legislative options for Connecticut's program. In 1979, the enabling legislation (P.A. 79-535) to implement a comprehensive CAM program was passed and was signed into law with an effective date of January 1, 1980.

With the passage of the CAM Act, the program completed its final year of developing a management plan for the State's coastal land and water uses and received preliminary federal approval from the Office of Coastal Zone Management, with final approval pending submission of CAM's master document Connecticut's Environmental Impact Statement and Coastal Management Plan, which will qualify the State for continued federal funding. Approval is expected later in 1980.

The CAM plan calls for the State and coastal municipalities to share responsibility for implementation. In anticipation of the new responsibilities of local officials, a series of educational workshops were conducted along the coast in December 1979. The workshops explained the local requirements of the CAM Act and helped identify local implementation responsibilities. CAM staff members demonstrated the maps, materials, and technical assistance available to the municipalities.

Information & Education

William Delaney, Director

During the first three-quarters of 1971 there was no individual unit handling information and education in the environmental area. Soon after the formal establishment of the DEP in October 1971 a small unit was set up to disseminate information

through the media, develop new materials, coordinate hunting and boating safety programs, and continue publication of the Connecticut Wildlife Conservation Bulletin. That bi-monthly publication was soon replaced by the Connecticut Environmental Bulletin. The original Information & Education Section was also charged with maintaining and increasing liaison with Connecticut's conservation commissions and other environmental organizations and co-ordinating and participating in an active speakers' bureau.

Late in 1973, DEP began publishing its Citizens' Bulletin and shortly thereafter publication of the Connecticut Environmental Bulletin was discontinued.

During much of the decade, the information and education program was almost entirely devoted to responding to individual or group requests. The education portion consisted largely of providing materials, on a piecemeal basis, to teachers who requested them. In 1978, the section added a new assistant director for education who devotes full time to encouraging teachers to incorporate environmental considerations into their programs and provides resources to assist them in this. The support of a CETA grant let the environmental education program expand its staff so it could work more closely with individual teachers and could initiate school-system-wide educational efforts.

During the past year, the section has become increasingly involved in coordinating efforts to promote citizen participation in the planning and decision-making of various units, particularly in the area of environmental quality.

Litter Control

Earl Carini, Director

The 1979 session of the State Legislature passed a comprehensive litter law to be effective January 1, 1980. This law is being implemented within present limits of funding which have been restricted by an Attorney General's decision that assessments on businesses, which will provide funding for the program, are not collectible until February 1, 1981.

Natural Resources Center

Dr. Hugo F. Thomas, Director

The Natural Resources Center was established in July 1972. Its director is also the State Geologist. The Natural Resource Center is a non-regulatory unit charged with: producing and collating the natural resource baseline data to serve the needs of units within the Department as well as other state and local agencies; centralizing natural resources information collected in the past; coordinating existing data collection programs; and developing usable formats, educational systems, and resource management programs.

The Geological and Natural History Survey makes and cooperates in compiling systematic inventories of basic natural resources data. These inventories are on-going and are conducted by State staff as well as through cooperative programs with federal agencies such as the U.S. Geological Survey Water Resources Division, Geological Division, and Topographic Division and the Soil Conservation Service of the U.S. Department of Agriculture. Inventories and analyses of Connecticut's topography, bedrock and surficial geology, hydrology, and soils are made and compiled. In addition, within the last two years work has begun on the initiation of a new State Intergovernmental Cooperative Climate Program with the National Oceanic and Atmospheric Administration and an Endangered Species Cooperative Program with the U.S. Fish and Wildlife Service.

The Survey's achievements include the continuation of detailed bedrock and surficial geology, seismicity, and tectonic studies and the publication of the results of such studies through more than 27 Quadrangle Reports and Geologic Quadrangle Maps, and one guidebook titled "Guide to the Mesozoic Red beds of Central Connecticut."

In the area of water resources seven of ten major basin studies to determine the quantity and quality of available water in Connecticut have been published in report form with the last three expected next year and under the Connecticut Natural Resources Atlas Series Connecticut Geologic Natural History Survey staff have summarized the field work of the ten river basin studies into a

1:125,000 scale map, "Ground Water Availability in Connecticut."

In its effort to provide a modern base map system for Connecticut, the entire State has coverage on 1:24,000 scale, 1"=2,000' topographic maps with 10 foot contour intervals. A new series is nearly completed which provides topographic coverage at 1:50,000 scale and approximately every five years a state map is produced with a 50 foot contour interval at a scale of 1:125,000. To complement this effort, also at five year intervals, the State contracts to have state-wide low altitude aerial photo stereo coverage at 1:12,000 scale, 1"=1,000'. Our next flight is scheduled for the spring of 1980.

In the field of biology, work has been initiated on an endangered species program with extensive field studies resulting in the publications "Rare and Endangered Species of Connecticut and their Habitats" and "Preliminary Checklist of the Vascular Flora of Connecticut."

The Data Application Section's responsibility is to take the data and information collected and generated by the Geological and Natural History Survey and manipulate or reformat it when necessary to respond to State agency and town users' needs.

One approach is to disseminate to environmental and land use decision makers technical information on natural resources distribution, processes, functional roles, and management alternatives in formats most suited to the needs and understanding of the specific decision making group. This is accomplished, in part, by maintaining a Public Natural Resources Library and sales office which handles all published and open filed maps, reports, and other pertinent documents.

Annually a Natural Resources Information Directory is prepared for each municipality. The directory is sent to all chief administrative officers, conservation, planning, zoning, and wetlands commissions in Connecticut. This summary is intended to keep the town agencies abreast of the various types of natural resources data that are available and to identify the sources responsible for collecting the data or that have expertise concerning the data.

A strong technical assistance program has been developed to complement our data dissemination. Routine assistance is supplied regarding the availability and interpretation of natural resource data maintained in the Center library. The multidisciplinary expertise of the center staff means they can respond to specific requests for special assistance beyond that which may be available in other units in the DEP. When appropriate, technical assistance is given to other State agencies and municipalities. A major accomplishment has been the establishment of a Connecticut Environmental Review Team, a multidisciplinary team of professionals in the fields of natural resources, engineering, and planning, that review major land use proposals with respect to the natural resource base, probable effects of the site conditions on the project, and the potential impact of the project on the environment.

Since most land use decisions are made on the local level, an ongoing user training program has been established. This comprehensive land use seminar series for local decision makers is offered each spring.

Open Space Acquisition

Richard Wallace, Director

In the early 1960s Connecticut became concerned with the rapid development of its landscape. The mass exodus from urban centers was at its peak, and the rural towns surrounding urban centers were rapidly changing from agricultural communities to suburban commuting communities. Fields that had produced corn, vegetables, and dairy products were sprouting houses and crabgrass.

A task force was established to review the problem of the rapid development of Connecticut's landscape. The result was the "Whyte Report," which recommended that the State take action to preserve its open spaces, ridge tops, and waterways.

In 1965, the General Assembly took the necessary action by enacting legislation establishing Connecticut's Open Space Program in the then Department of Agriculture and Natural Resources. This program enables the State to assist the towns

and municipalities in the acquisition of open space to preserve our landscape and to allow for orderly growth and development of the towns and cities of Connecticut.

At the same time, the Congress of the United States established the Land and Water Conservation Fund in the Department of the Interior, Bureau of Outdoor Recreation. This program provides funds to the states to assist in the acquisition of open space. The Department of Housing and Urban Development had a similar program which was discontinued in 1971. This double-barreled federal assistance allowed the State greater flexibility to address the demands placed upon the program by the cities and towns. The policy at that time was to provide assistance to urban areas with HUD funds and to other areas with BOR funds.

In the early stages of the program, the acquisition of open space was the prime goal. As the development pressures eased and the financial burdens of the cities and towns increased, monies allocated for recreation were given a low priority by Connecticut's cities and towns. It became apparent in 1978 that developing recreation sites was necessary, and the General Assembly took action and amended the enabling legislation to make 25 percent of the federal monies available to the cities and towns for the development of recreational sites. This was increased to 40 percent in 1979 as the need became more apparent.

More and more the requests for assistance are for development of recreational sites. In 1978, the Congress of the United States, through the Heritage Conservation and Recreation Service of the Department of the Interior, recognized the fact that parks and recreation facilities in urban areas were deteriorating and that cities and towns did not have the financial resources to maintain these facilities. Congress instituted the Urban Parks and Recreation Rehabilitation Program. This program provides for 85 percent grant-in-aid to qualified cities and towns to assist in rehabilitation of recreational facilities. The Connecticut General Assembly again rose to the occasion and enacted legislation to provide for a 15 percent State grant in conjunction with the federal program.

The Open Space Acquisition Unit has expended \$50,000,000 for acquisition and \$2,500,000 for development since the inception of the program in 1965.

Planning & Coordination

The Office of Planning and Coordination serves the Commissioner in policy formulation and planning, interagency and intra-agency coordination, and research. Responsibilities of the unit include agency planning (including statewide recreational — SCORP planning), policy planning and analysis, program evaluation and regulations (in conjunction with the administering unit), liaison with the legislature and legislative drafting (in conjunction with the administering unit), coordination of agency review of environmental impact statements, A-95's and related documents, supervision of activities under the Connecticut Environmental Policy Act (CEPA), and agency staff participation on the Power Facility Evaluation Council (PFEC).

Planning and Coordination has been responsible, in whole or part, for the development or formulation of three operating units within DEP, two new programs within existing DEP units, and one new agency. They are: DEP's Natural Resource Center (1972); DEP's Noise Control Unit (1974); DEP's Coastal Management Unit (1975); DEP's "Indirect Source Program" in the Air Compliance Unit (1973); and DEP's "Lakes Management Program" in the Water Compliance Unit (1978); and Connecticut Resource Recovery Authority (1973), all of whose original organizational studies and enabling legislation came out of this office.

In addition, Planning and Coordination has played a major role in the development of regulations for several DEP programs. They include the following: DEP's State Implementation Program for Air Quality regulations (1972); DEP's Sea Lanes regulations (1973); DEP's pesticides regulations (1974); Connecticut Environmental Policy Act (CEPA) regulations (1974-1977); and Bottle Bill regulations (1979).

Planning and Coordination has also had a substantial role in a variety of major research tasks, chairing several task forces to manage research. The most notable of these are the Fact-Finding Task Force on Oil Refineries (1974) and the Coal Conversion Task Force (1979).

Planning and Coordination has a variety of on-going responsibilities relating to its work in the field of environmental planning. Major continuing responsibilities include: recreational planning through the Statewide Comprehensive Outdoor Recreation Plan (SCORP); legislative liaison; coordination of agency reviews of environmental impact statements and related documents; preparation of or provision of technical assistance on CEPA statements; and representing the Commissioner on a number of boards and committees.

(Note: As this article was being written, a merger between the Planning and Coordination and Coastal Management Units was effected.)

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